

Montana Board of Oil and Gas Conservation

Environmental Assessment

Operator: Oasis Petroleum North America LLC
Well Name/Number: Crocket 2958 42-21 #1H
Location: SE SW Section 21 T29N R58E
County: Roosevelt, MT; Field (or Wildcat) Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 25-35 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation test, 20,802' MD/10,500' TVD.

Possible H2S gas production: Yes, slight H2S possible from Mississippian Formations.

In/near Class I air quality area: No Class I air quality area nearby.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☒ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: If there are existing pipeline for natural gas in the area then associated gas must be tied into system or if no gathering system nearby associated gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Yes will drill with oil based invert drilling fluids for the intermediate casing string hole (2,237'-10,728'). Horizontal hole will be drilled with saltwater 10,728'-20,802'). Surface casing hole will be drilled with freshwater and freshwater mud system (0-2,237'), Rule 36.22.1001.

High water table: No high water table anticipated at this surface location.

Surface drainage leads to live water: Yes, closest drainages are unnamed ephemeral tributary drainage to East Shotgun Creek, about ¾ of a mile to the west and about 1 mile to the northwest from this location.

Water well contamination: No, closest water wells are about 3/8 of a mile to the southeast, about 5/8 of a mile to the northwest, about ¾ of a mile to the west and 1 mile to the southwest from this location. Depth of these water wells range from 216' to 300'. This proposed oil well will be drilled with freshwater and freshwater mud to 2,237' and steel surface casing will be run and cemented to surface to protect groundwater, rule 36.22.1001.

Porous/permeable soils: No, sandy silty clay soils.

Class I stream drainage: No Class I stream drainage in the area of review.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☒ **Off-site disposal of liquids (in approved facility)**

☒ Other: Pit liner will be a synthetic impermeable 12 mil liner.

Comments: 2,237' surface casing will be drilled with freshwater, steel casing will be run to 2,237' and cemented back to surface, to protect freshwater zones in adjacent water wells, Rule 36.22.1001. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment will prevent problems, (5,000

psig annular and double ram), Rule 36.22.1014.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: Yes possible high erosion potential on moderate cut and fill slopes, location will require a moderate cut of up to 26.7' and a moderate fill of up to 31.1', required.

Loss of soil productivity: No, location to be restored after drilling, if nonproductive. If productive, unused portion of this drillsite will be reclaimed.

Unusually large wellsite: Yes, a large well site 480'X350' for a dual wellsite, Crocket 2958 42-21 #1H and Bowie 2958 42-21 #1H.

Damage to improvements: Slight, surface use appears to be grazing grassland.

Conflict with existing land use/values: Slight

Mitigation

- ☐ Avoid improvements (topographic tolerance)
- ☐ Exception location requested
- ☒ Stockpile topsoil
- ☐ Stream Crossing Permit (other agency review)
- ☒ Reclaim unused part of wellsite if productive
- ☐ Special construction methods to enhance reclamation
- ☐ Other _____

Comments: Access will be over existing county road, FAS 405. About 2576' of new access road will be built into this location from the county road. Oil based invert drilling fluids will be recycled.

Completion fluids will hauled to a commercial Class II disposal. Cuttings and solids will be buried/solidified on site in the lined reserve pit. The pit will be allowed to dry and the pit backfilled. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Nearest residences are about 1/2 of a mile to the southeast, about 5/8 of a mile to the northwest and about 3/4 of a mile to the northwest from this location. The Town of Bainville, MT is about 7.3 miles to the south southwest from this location.

Possibility of H2S: Yes, slight from Mississippian Formations.

Size of rig/length of drilling time: Large triple drilling rig, 25 to 35 days drilling time.

Mitigation:

- ☒ Proper BOP equipment
- ☐ Topographic sound barriers
- ☐ H2S contingency and/or evacuation plan
- ☐ Special equipment/procedures requirements
- ☒ Other: H2S safety equipment standard for the area.

Comments: Adequate surface casing cemented to surface, Rule 36.22.1001, with working BOP stack should mitigate any problems. (5,000 psig annular and double ram), Rule 36.22.1014.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Least Tern, Whooping Crane and Piping Plover. Candidate species is the Sprague's Pipit. NH tracker website indicates the following one (1) species of concern as follows: Whooping Crane.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private surface grazing grassland. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: Private surface grazing grassland. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: Wildcat well. No concerns

Remarks or Special Concerns for this site

A wildcat exploratory single lateral horizontal Bakken Formation well test, 20,802'MD/10,500'TVD. No concerns.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected, some short term impacts will occur, but can be mitigated.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title:) Chief Field Inspector

Date: July 3, 2013

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Roosevelt County water wells
(subject discussed)
July 3, 2013
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Roosevelt County, Montana
(subject discussed)
July 3, 2013
(date)

Montana Natural Heritage Program Website
(Name and Agency)
Heritage State Rank= S1, S2, S3, Location T29N R58E
(subject discussed)

July 3, 2013
(date)

Montana Cadastral Website
(Name and Agency)
Ownership and surface use Location: Section 21 T29N R58E
(subject discussed)

July 3, 2013
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____